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Towards a New International Economic Order

Report of the Secretary-General

Summary

Pursuant to General Assembly resolutions 3201 (S-VI) and 3202 (S-VI), the present report provides an updated overview of the major international economic and policy challenges for equitable and inclusive sustained economic growth and sustainable development and highlights the role of the United Nations in addressing these issues in the context of the New International Economic Order. Based on information provided in voluntary national reviews at the annual high-level political forum on sustainable development, the present report provides an assessment of the progress made and challenges faced in achieving inclusive and equitable economic growth and sustainable development. It finds that significant progress was made towards many of the Sustainable Development Goals during 2016–2017. However, the near-term prospects of the world economy, against the backdrop of prevailing uncertainties in international trade, monetary policy adjustments and financial market conditions, pose a risk to equitable and sustained economic growth. Slow progress in combating climate change and improving environmental sustainability, underpinned by inadequate financing gaps, presents additional challenges to sustainable development. The report identifies the immense potential of new technologies for many economic, social and environmental challenges and underscores the need for greater national efforts and international cooperation, as envisaged in the Declaration on the Establishment of a New International Economic Order, to facilitate technology transfers and bridge the persistent technological divide between developed and developing countries. In the report, the United Nations is called upon to extend its role in supporting the responsible use of new technologies in the achievement of sustainable development objectives, anchored in broadly accepted values as enshrined in the Charter of the United Nations, the Universal Declaration of Human Rights and internationally agreed development goals.

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I. Introduction

1. The ideas and proposals for action for a New International Economic Order, set out in May 1974 in the Declaration on the Establishment of a New International Economic Order (resolution 3201 (S-VI)) and the Programme of Action on the Establishment of a New International Economic Order (resolution 3202 (S-VI)), have acquired additional relevance at present in the context of the rapid pace of technological change, which is fundamentally transforming economies and societies around the world. Those ideas and proposals bring to the fore the existence of a large and persistent technological and development divide between developed and developing countries; challenges in technological transfer and industrialization for developing countries; the issue of the sustainable use of natural resources; and deteriorating conditions of trade and labour migration. These are precisely the issues that were emphasized in the Declaration and Programme of Action. In those documents, the United Nations pledged to address inequities in the international system, eliminate income and technological gaps between developed and developing countries, ensure steadily accelerating economic and social development and secure peace and justice for the present and future generations.

2. Adhering to the spirit and principles of the Declaration will help to achieve the important agendas that the world community adopted in 2015, including the Addis Ababa Action Agenda of the Third International Conference on Financing for Development, the 2030 Agenda for Sustainable Development and the Paris Agreement. The role of technology is recognized in those global accords, underscoring its critical importance in harnessing sustainable development outcomes, in the spirit of a New International Economic Order envisaged more than 40 years ago.

3. Adherence to the principles of the New International Economic Order can also help to mitigate risks to sustained economic growth arising from recent changes in global policy landscapes. The New International Economic Order is aimed at ensuring stability through measures that contain inflation and eliminate instability of the international monetary system, particularly uncertainties in exchange rates (resolution 3202 (S-VI), sect. II (1) (a) and (b)), so that developing countries can achieve sustained economic growth. Although the global economy has strengthened in the two years since the issuance of the previous report on the New International Economic Order (A/71/168), there are growing risks of trade disputes between major economies with large global spillovers, uncertainty about monetary policies, the possibility of out-of-control fiscal deficits and potential debt crises. The prospect of sustained growth is currently more uncertain than it was in the recent past, following a long-drawn-out recovery from the global financial crisis. The trade conflicts may further undermine progress towards the multilateral, rule-based and equitable global trade regime that was an important proposition of the New International Economic Order. The international cooperation that was envisaged in the Order can help to avert uncertainties and return the world economy on the path to sustained growth.

4. The New International Economic Order provides a framework for addressing inequities and injustices in the international regime and promoting inclusive and equitable growth. Since the issuance in 2016 of the previous report on the New International Economic Order, many developing countries have demonstrated progress in addressing economic and social inequalities. Most countries that submitted voluntary national reviews on the Sustainable Development Goals for the high-level political forum on sustainable development reported progress in reducing poverty, raising life expectancy, reducing child mortality and achieving gender parity in education. However, large budget deficits and constraints on expansionary fiscal policies are likely to weaken social protection and skew income distribution towards

high-income groups, putting at risk further progress towards inclusive and equitable economic growth.

5. The vision of the New International Economic Order regarding South-South cooperation and its rising importance has proved to be prescient. Many developing countries have achieved significant progress in infrastructure development in recent years. This has been possible to a large extent through South-South cooperation. In particular, the Belt and Road Initiative of China has the potential to serve as an important catalyst for boosts in infrastructure investments not only in developing countries in Asia, Africa and Latin America but also in some countries in Europe. South-South cooperation is emerging as an important conduit for facilitating technology transfers among developing countries.

6. The ideas of the New International Economic Order can be helpful in achieving the environmental goals of the 2030 Agenda and in particular the Paris Agreement. The Declaration and Programme of Action stressed the need to refrain from damaging or deteriorating natural resources by preventing pollution (Programme of Action, sect. I (2) (d)); to put an end to the waste of natural resources, including food products (Declaration, para. 4 (q)); and to take measures to expand the markets for natural products in relation to synthetics and utilize fully the ecological advantages of natural products (Programme of Action, sect. I (1) (f)). The New International Economic Order also advocated what is currently called the "nexus approach" to food production and the conservation of land and water resources, including arresting desertification and salination (Programme of Action, sect. I (2) (c)).

7. Those suggestions have gained more importance with time as environmental sustainability challenges have become more acute. This is evident in the case of climate change, which is the greatest environmental challenge. Preliminary estimates for 2017 indicate that carbon emissions have started to grow again, after experiencing some decline during 2014 and 2015. Stronger international cooperation, as envisaged in the New International Economic Order, can help to mobilize international collective actions to confront climate change effectively. The New International Economic Order proposition of replacing synthetic substitutes with natural products is particularly relevant to combating plastic pollution, which is the second most important threat to the environment.

8. The present report is organized as follows: the challenges to sustained economic growth are discussed in section II, the challenges to inclusive and equitable growth and social development in section III and the challenges to environmental sustainability in section IV. The relevance of the ideas of the New International Economic Order in the context of the rapid pace of technological change is discussed in section V, and the role of the United Nations is examined in section VI.

II. Challenges to sustained economic growth

9. The global economy has strengthened since the issuance of the previous report on the New International Economic Order. Growth in the volume of world trade accelerated in tandem with an improvement in macroeconomic conditions. The increased demand for imports at the global level pushed energy and metal prices upward and led to gains in terms of trade for energy- and metal-exporting countries. However, at present, the global economy is exposed to an increased likelihood of trade conflicts among major countries, increased uncertainty about the pace of monetary policy adjustments in the United States of America and high and increasing levels of external debt. The magnitude of the impact of those risk factors will depend not only on the reactions of the countries directly involved but also on the global

spillovers. Developing countries, particularly vulnerable ones, could be seriously affected in the absence of adequate safeguards and mitigation measures.

A. The global economy has strengthened but downside risks are emerging[1]

10. In the previous report on the New International Economic Order, it was forecast that gross world product would expand by just 2.4 per cent in 2016 and "feeble investment [would] continue to weigh on the global growth potential in 2017 and beyond". Against that forecast, the global economy grew by 2.5 per cent in 2016 and is estimated to have grown by 3.1 per cent in 2017. Towards the end of 2016, crisis-related fragilities that had been continuing since 2008 finally subsided and global economic activities experienced a modest pickup, which extended into 2017. The strong recovery in investment activities, particularly in developed countries and in East Asia, was a key determining factor. The stronger economic activity, however, was not shared evenly among countries and regions: the recovery was limited to a narrow set of countries in East and South Asia. Economic conditions remained challenging for many commodity-exporting countries in Africa, Western Asia and parts of South America, underscoring those countries' vulnerability to boom and bust cycles of commodity prices — a challenge for exporters of primary commodities that was highlighted in the Programme of Action in 1974.

11. The relatively robust growth prospects are expected to continue in 2018 and 2019, expanding at a rate of 3.2 per cent in both years. The prospects are based on broadly favourable investment conditions, strengthening wage growth and the short-term impact of the fiscal stimulus package in the United States, implemented in December 2017. The major risk factor to the global economy as of mid-2018 is increasing levels of debt and rising asset prices, because of the "releveraging" after a long period of "deleveraging", following the global financial crisis. While increasing debt financing alone is not a risk factor, the fast pace of debt accumulation would make the global economy vulnerable to a sudden decline in the value of assets.

12. Growth in the least developed countries is estimated to be 5.2 per cent in 2018 and 5.5 per cent in 2019, continuing a steady growth acceleration since 2015.[2] Their gross domestic product (GDP) per capita is also forecast to rise, but the pace of increase is not sufficient to eradicate extreme poverty by 2030, as envisaged in the Sustainable Development Goals. The global economic upturn largely bypassed Central and Southern Africa, where GDP per capita is forecast to increase only marginally during 2018 and 2019.

B. Trade and commodity prices

13. The ongoing strong economic recovery pushed up energy and metal prices. The price of Brent crude oil averaged $68 per barrel in the first four months of 2018, compared with $54 per barrel in 2017. Metal prices are forecast to recover in 2018, driven largely by robust industrial production, particularly in China. Agricultural commodity prices are projected to remain stable, while localized price spikes in parts of Western Asia and Africa remain likely, owing to drought and conflict.

[1] The present section is based largely on *World Economic Situation and Prospects 2018* (United Nations publication, Sales No. E.18.II.C.2) and *World Economic Situation and Prospects 2018: Update as of Mid-2018* (United Nations publication, forthcoming).

[2] Yemen is likely to face a deteriorating situation due to the ongoing political uncertainties.

14. The volume of world merchandise trade grew by 4.3 per cent in 2017 and is forecast to further strengthen in 2018, reflecting a strong global economic recovery. During the first quarter of 2018, all regions contributed to the increase in global demand for imports for the first time since 2010. This was driven by the recovery in investment activities in both developed countries and countries in East Asia, particularly China. Growth in global trade is forecast to moderate slightly in 2018 and 2019.

15. Despite those positive developments, greater uncertainties loom large in international trade because of dramatic shifts in trade policies by major economies. The Government of the United States began a sweeping review of existing trade agreements in 2017 and has since proposed a series of protective or safeguard measures, citing imbalances in bilateral trade or market access and invoking national security concerns. In 2018, the Government imposed new tariffs on a range of manufactured goods, including steel, aluminium, washing machines and solar panel cells, in addition to more than 1,000 products from China. In response to those measures, major trading partners, such as Canada, China, Mexico and the European Union, are implementing or considering appropriate retaliatory measures and seeking solutions to the disputes at the World Trade Organization.

16. The situation remains in flux, and uncertainty and risks with regard to a fluid trade policy landscape could dampen investment. Prolonged weakness in trade and investment activity will undermine the growth prospects of the global economy, including of many developing countries, through the complex global and regional production and service networks.

C. Official development assistance and international financial flows

17. Domestic public resources are considered one of the most important sources for financing sustainable development. Official development assistance (ODA) can help to strengthen and scale up domestic resource mobilization. In 2017, net ODA provided by members of the Development Assistance Committee of the Organization for Economic Cooperation and Development (OECD) stood at $146.6 billion, or 0.31 per cent of gross national income (GNI) of the members of the Committee. This represents a drop of $800 million compared with 2016, the first year-to-year fall since 2011–2012. The fall was due to an 11 per cent reduction in donors' spending on refugees inside their own borders because of the reduced intensity of the refugee crisis. When the within-country spending on refugees was excluded, ODA provided to developing countries increased by $989 million (or 1.1 per cent) from 2016 in real terms. Nonetheless, ODA from donors continues to remain far below the United Nations target of 0.7 per cent of GNI. Only five donors met the target in 2017, down from six countries in 2016.

18. Net ODA provided to the least developed countries is estimated to have risen slightly to around $25.3 billion in 2017 from $25.0 billion in 2016 in real terms. This reverses the declining trend in recent years, but the 2017 figure is still likely to be more than $5 billion lower than in 2012, which was the peak year. Members of the OECD Development Assistance Committee provided 0.08 per cent of their GNI to the least developed countries in 2015,[3] well below the United Nations target to allocate 0.15 to 0.20 per cent of GNI.

19. The prolonged fallout from the global financial crisis has largely subsided. In 2017, global financial markets witnessed a sharp upward trend in leveraging, buoyed by the historically high stock prices in developed countries and some emerging

[3] OECD, *Development Cooperation Report 2017: Data for Development* (Paris, 2017).

economies and the low volatility in equity and bond markets. For some countries, the favourable financial conditions translated into significant increases in issuance of debt security, merger and acquisition activity and rising corporate buy-backs. All those activities have been associated with an increase in financial asset valuation and a rise in external debt levels across regions.

20. Several risks loom large in international finance. In the midst of a fast-paced releveraging process, monetary policy adjustments (often called the normalization process) in developed countries, particularly in the United States, have been largely gradual. However, the fiscal stimulus measures introduced by the Government of the United States in December 2017, together with potential upward pressure on inflation from protective and safeguard trade measures, have increased the likelihood of a quicker tightening of monetary policy stance. The prospects of tighter liquidity conditions and of a faster pace of monetary tightening are likely to increase borrowing costs and put downward pressures on the exchange rates of many emerging economies, potentially undermining their short- and medium-term economic prospects.

21. A few emerging economies are already facing this challenge. In the first five months of 2018, Argentina and Turkey witnessed their currencies depreciate by around 20 per cent against the dollar and are forecast to experience double-digit inflation in 2018. Their external debt levels have been rising and currently stand at around four times their foreign reserves. The monetary authorities in those countries have raised policy interest rates to stabilize domestic prices and preserve the value of their national currencies, at the expense of economic growth. In contrast, the countries in South-East Asia that experienced the Asian financial crisis in the late 1990s, particularly Malaysia and Thailand, have experienced appreciations of their national currencies against the dollar and relatively low levels of inflation. This is largely because they have kept low levels of external debt, a current account surplus and the fiscal balance in check.

22. The prospect of further tightening of financial conditions and unexpected spikes in risk aversion among investors could affect the balance sheets of banking and corporate sectors and the capacity to roll over debt even for countries that have not been affected so far. The effect on real economic activity can be significant, through a rapid slowdown in investment, high inflation or fiscal adjustment measures. In the Programme of Action, it is recommended that "appropriate urgent measures, including international action, should be taken to mitigate adverse consequences for the current and future development of developing countries arising from the burden of external debt contracted on hard terms" (sect. II (2) (f)).

D. Policy challenges

23. The international community is currently facing challenges that have been caused largely by policies implemented in a few developed countries. The exceptional stimulus measures employed by the central banks in developed countries in the aftermath of the financial crisis in 2008–2009 created loose financial conditions at the global level. The normalization process of their monetary policy stances and the pace of adjustment, however, currently present a significant challenge to many developing and emerging economies that took advantage of the loose financial conditions in recent years. The prospect of escalating tensions among major trading nations presents a new challenge even for developing countries that are not part of the unfolding trade conflicts.

24. In the Declaration, Member States cautioned that a series of grave crises in the 1970s had had "severe repercussions, especially on the developing countries because

of their generally greater vulnerability to external economic impulses" (para. 2). The prosperity of the international community as a whole depends on the prosperity of its constituent parts, developed and developing countries alike. As stated in the Declaration, "international cooperation for development is the shared goal and common duty of all countries" (para. 3).

25. A further escalation in trade conflicts would severely undermine the rule-based multilateral trading system and reverse progress made since the adoption of the Declaration in 1974. The financial risks associated with ongoing monetary policy adjustments in developed countries could induce instability in the international monetary system, leading to exchange rate depreciation and unsustainable levels of external debt in many developing and emerging economies. Policymakers, particularly those in developed countries and a few large developing countries, must make coordinated efforts to make international trade and financial systems more stable and resilient to crisis.

III. Progress and challenges in achieving inclusive and equitable economic growth and social development

26. The present section provides a review of progress made since 2016 in achieving inclusive and equitable economic growth and social development goals and the challenges faced in this regard. It is based on information from the voluntary national reviews on the Sustainable Development Goals submitted by countries at the high-level political forum on sustainable development, complemented by data and information from other relevant sources.

A. Achievements

27. The voluntary national reviews indicate that many countries made progress towards the Sustainable Development Goals. As they were at the initial stage of implementation of the Goals, most countries directed much of their efforts to developing necessary institutional frameworks for achieving the Goals. For example, many countries created national coordination mechanisms and other high-level platforms to engage various stakeholders, including the Government, the private sector, civil society, non-governmental organizations, academia, youth and the international community. In the process, the countries have become national owners of the Goals and have integrated them into their national development plans and strategies.

28. A majority of the countries that submitted voluntary national reviews viewed inclusive and green growth as the main vehicle for creating employment and achieving various social goals. With a view to improving the quality of productive employment, countries are also making efforts to support social protection systems, research and development, science and technology, skills upgrading and the improvement of links between education and labour market demands, for example through business-led technical and vocational education and training. Countries are also paying increased attention to ensuring equal opportunities for decent employment for both women and men, indigenous populations, the elderly, the lesbian, gay, bisexual and transgender community and persons with disabilities, to ensure that no one is left behind.

29. While pursuing growth and employment, many countries are prioritizing and implementing policies to reduce income inequality. For example, Bolivia (Plurinational State of), Ecuador, El Salvador, Kyrgyzstan, Panama, the Republic of Moldova, Turkey and Ukraine continue to demonstrate declines in their Gini index of

inequality in income distribution. The reduction in income inequalities was complemented by a reduction in gaps in access to land, social services (e.g. education, water, sanitation, health care, public transportation) and knowledge-intensive technologies.

30. Most countries have also prioritized the eradication of hunger and extreme poverty. A few middle-income countries have recognized that there are pockets of large concentrations of people below the poverty line. They have therefore made special efforts to raise the standard of living of people belonging to the bottom 40 per cent of income distribution. The majority of developing countries that submitted voluntary national reviews have reported significant strides in reducing extreme poverty (measured as less than $1.90 per day) in 2016 and 2017. Prominent among them are Armenia, Colombia and Indonesia.

31. Many countries have raised their public expenditure on education. For example, Bolivia (Plurinational State of), Kyrgyzstan, the Republic of Moldova and Ukraine have increased education expenditure to 5–6 per cent of GNI. Similarly, many countries reported making significant progress in achieving gender parity in education. For example, in Bolivia (Plurinational State of), Ecuador, El Salvador, Kyrgyzstan, Panama, the Republic of Moldova, Turkey and Ukraine, the percentage of female students in secondary education was reported to have reached 48 per cent.

32. Similarly, health expenditure as a percentage of GDP increased in most of the reporting countries during 2016–2017. Albania, Armenia, Bangladesh, Belize, Brazil, Colombia, Costa Rica, El Salvador, Georgia, Jordan, Malaysia, Maldives, Mexico, Panama and Peru reported having made significant progress in reducing child and maternal mortality during 2016–2017. In many of those countries, 96 to 100 per cent of child births were assisted by a skilled health staff.[4] A few countries also paid particular attention to reducing the spread of various communicable and non-communicable diseases. However, maternal and child mortality remain high in many developing countries, pulling down the average life expectancy.

33. The rapid growth of urbanization and especially slums prompted many developing countries to commit to building sustainable cities. As a result, green cities and eco-cities have been built as pilot models of sustainable urban development. The building of compact housing, the increased use of renewable energy in industry, the improvement of public transportation and the promotion of green areas are a few examples in that direction. Sustainable urbanization is not possible without sustainable infrastructure, including energy infrastructure. Many countries therefore have prioritized building resilient infrastructure and ensuring wider access to affordable, reliable, sustainable and modern energy. They are also promoting economic diversification, innovation and inclusive green growth, based on eco-friendly technologies.

34. In view of the growing importance of new technologies, developing countries are making concerted efforts to narrow the technological divide with developed countries. In particular, they are trying to ensure wider access to electricity, the Internet and renewable energy technologies. Success in this regard, however, requires greater public investment in infrastructure building and human resource development. At least 50 per cent of the populations in Albania, Armenia, Brazil, Chile, Costa Rica, Egypt, Georgia, Jordan, Malaysia, Maldives and Panama currently have access to Internet services. Afghanistan, Bangladesh, Botswana, Ethiopia and Panama, for their part, have significantly improved access to electricity during the past two years.

[4] World Bank, World Development Indicators database. Available at http://databank.worldbank.org/data/source/world-development-indicators.

35. Most countries recognize that achieving the Sustainable Development Goals requires strengthening institutional, technological, agricultural, industrial and human capacities. Consequently, they have been improving administrative and management capacities, providing higher-quality education and focusing on science and technology and skill-building programmes. In addition, given the demand for new data and statistics for measuring and monitoring progress towards the Goals, all countries have been updating their statistical frameworks and capacities by prioritizing investment in good-quality data and statistics. The Statistics Division of the Department of Economic and Social Affairs plays a key role in providing technical guidance to countries.

B. Challenges

36. Despite the progress mentioned above, considerable challenges persist in achieving inclusive and equitable growth and the social development goals. For most developing countries, the challenges lie in finance, technology and capacity. Much of the financing of the Sustainable Development Goals is expected to come from the private sector, and yet large amounts of capital lie idle in the banking system and within corporate accounts. That capital can be tapped to finance inclusive, equitable and eco-friendly growth and infrastructure development projects in developing countries. Unfortunately, this is not being done to the extent necessary and desirable. Aligning incentives for private business with the priorities of sustainable development projects is proving more difficult than anticipated.

37. Meanwhile, a large amount of capital of developing countries, resulting from an accumulation of their current account surpluses, remains invested in low-yielding securities of developed countries. That implicit "flight of capital" from developing countries is providing low-cost financing to developed countries, rather than being used to finance growth and development in the developing countries themselves. Part of the problem lies in the weaknesses of the international financial system, which force developing countries to hold their reserves in semi-liquid form, investing in short-term securities of developed countries, as insurance against a run on their currencies and/or destabilization caused by a sudden outflow of capital. Overcoming the weaknesses of the current international financial system is therefore important for mobilizing the finances necessary for achieving the Sustainable Development Goals. The ideas of the New International Economic Order, which highlighted the inequities of the international financial system, can be helpful in this regard.

38. Developing countries are also faced with the challenge of containing capital flights — in the form of tax evasion, tax avoidance and illicit flows — from private sector entities. An important obstacle for many countries is finding ways to stop such capital flights and instead use the capital for investment at home, promoting inclusive and equitable growth. Overcoming that challenge requires both measures at home and international cooperation, as envisaged in the New International Economic Order.

39. Countries that are either in conflict or emerging from conflict face a particular set of challenges. Apart from resulting in the destruction of physical and human capital, such conflicts also discourage new capital formation. Ending conflicts and ensuring a smooth transition from conflict to peaceful nation-building is therefore a major challenge for achieving sustainable development.

IV. Progress and challenges in achieving environmental sustainability

40. Protecting the environment is a central focus of the development agenda adopted by the international community in 2015. Unfortunately, progress in this regard remains uneven and slow. This is particularly the case with regard to climate change, the most important threat to environmental sustainability.

41. The Paris Agreement calls for limiting the temperature increase to 1.5°C above pre-industrial levels. Achieving that goal requires a drastic and immediate reduction in the volume of emissions. However, preliminary estimates show that the volume of global emissions has increased in 2017, reversing the declining trend observed in 2014 and 2015.[5] In fact, 2016 was a historic year in several ways: it was the first year in which the atmospheric carbon concentration officially remained above the threshold of 400 parts per million, the red line marking the danger zone of climate change. The year 2016 was also the hottest on record, with temperatures about 1.1°C higher than pre-industrial levels.[6]

42. Nationally determined contributions are at the heart of the Paris Agreement. Such contributions include pledges by each country to reduce national emissions. However, the gap between the needed reductions and the national pledges made in the contributions is alarmingly wide. Current pledges cover only one third of the emission reductions needed to be on a least-cost pathway to stay below 2°C.[7]

43. Switching from fossil fuels to renewables is one of the main routes for reducing global emissions. Global investments in renewable energy increased by 2 per cent from 2016 to 2017, reaching $279.8 billion, with China alone accounting for $126.6 billion (45 per cent) and developed countries for $103.5 billion (37 per cent).[8] The rest of the world accounted for only 18 per cent. Those investments led to an addition of 157 GW of global renewable energy capacity, increasing the share of renewables in total electricity by 1.1 percentage points. Renewables accounted for over 70 per cent of all newly installed power generation capacity in 2017, with solar accounting for 38 per cent of the increase.[9] While those achievements are impressive, investment in renewables in 2017 was 13 per cent below the record set in 2015, and the share of renewables in total electricity generated in 2017 was only 12.1 per cent.

44. The global deployment of electric vehicles for road transport, an important technological breakthrough for reducing emissions, has grown rapidly in recent years. In 2016, the global stock of electric vehicles reached close to 2 million, with China having the largest share.[10] However, the net effect of electric vehicles on emissions depends to a large extent on the source of electricity used to charge the batteries. Unfortunately, in many countries electric vehicles are still powered by electricity generated from fossil fuels.[11]

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[5] Glen Peters and others, "Towards real-time verification of CO_2 emissions", *Nature Climate Change*, vol. 7, No. 12 (13 November 2017).

[6] World Meteorological Organization, "WMO confirms 2016 as hottest year on record, about 1.1°C above pre-industrial era", press release, 18 January 2017.

[7] United Nations Environment Programme (UNEP), *The Emissions Gap Report 2017* (Nairobi, 2017).

[8] Frankfurt School-UNEP Collaborating Centre and Bloomberg New Energy Finance, *Global Trends in Renewable Energy Investment 2018* (Frankfurt, 2018).

[9] Ibid.

[10] International Energy Agency, *Global EV Outlook 2017: Two Million and Counting* (Paris, June 2017).

[11] World Economic Forum, "The surprising truth behind the world's electric cars", 5 March 2018.

45. Progress in other key technologies to fight climate change remains rather limited. For example, improvements in carbon capture and storage or energy efficiency have slowed.[12] Energy intensity, measured by energy used per unit of GDP, decreased in 2017 by only 1.7 per cent, compared with a 2.0 per cent decrease in 2016. In order to achieve the relevant Sustainable Development Goal target, the energy intensity has to decrease in the coming years by an annual average of 3.2 per cent, which is almost double the reduction achieved in 2017.[13] The mitigation challenge is therefore formidable.

46. The Paris Agreement also focused on the challenge of adaptation, which is a more immediate and serious constraint for many developing countries. Recent studies predict that many low-income countries will experience not only higher levels of temperature increase but also greater variation in temperature, compared with developed countries.[14] Unfortunately, progress towards meeting the adaptation challenge has yet to meet expectations.

47. Article 9 of the Paris Agreement stipulates that developed countries shall provide financial resources — amounting to $100 billion per year by 2020 — to assist developing countries with their mitigation and adaptation efforts. It is notoriously difficult to measure climate finance accurately, and the lack of internationally agreed modalities to account for climate finance has given rise to different accounting practices. What is clear is that meeting the $100 billion target by 2020 remains far off. In a report entitled "Road map to US$ 100 billion", issued by a group of countries in 2016, public climate finance levels were estimated to have reached $41 billion per year in 2013–2014. In a more recent report, OECD estimates that bilateral climate-related development finance surpassed $30 billion in 2016.[15] So far, only around 20 per cent of climate finance from developed to developing countries is allocated for climate change adaptation.[16] Developing countries are experiencing a large financing gap in adaptation, which is projected to grow further as adaptation needs increase with rising climate impacts.[17]

48. The progress in mitigating plastic pollution is also less than satisfactory. Annual global plastic production increased from 1.7 million to 322 million metric tons between 1950 and 2015. Over that period, 6.8 billion metric tons of mostly non-biodegradable plastic waste was accumulated. Nearly 80 per cent of that waste has been deposited in landfills or in bodies of water, including lakes, seas and oceans. The total volume of plastic in the ocean is soon to exceed the total volume of all fish species.[18] Whales dying from ingestion of plastic debris are showing up on seashores more frequently. Plastic microbes are spreading to the air and entering the food chain in increasing order, posing a serious health risk for humans as well. Around the world, plastic waste is causing havoc to land, water and air. Unfortunately, awareness of the danger posed by plastic pollution is still not adequate. Developing countries are embracing plastic pollution, imitating unsustainable production and consumption

[12] International Energy Agency, *Tracking Clean Energy Progress 2017: Energy Technology Perspectives 2017 Excerpt — Informing Energy Sector Transformations* (2017).

[13] International Energy Agency and others, *Tracking SDG 7: The Energy Progress Report 2018* (Washington, D.C., World Bank, 2018).

[14] Sebastian Bathiany and others, "Climate models predict increasing temperature variability in poor countries", *Science Advances*, vol. 4, No. 5 (2 May 2018).

[15] OECD, "Climate-related development finance in 2016", December 2017.

[16] *World Economic and Social Survey 2016: Climate Change Resilience — An Opportunity for Reducing Inequalities* (United Nations publication, Sales No. E.16.II.C.1).

[17] UNEP, *The Adaptation Finance Gap Report* (Nairobi, 2016).

[18] *World Economic and Social Survey 2018: Frontier Technologies and Sustainable Development* (United Nations publication, forthcoming).

patterns observed in developed countries. The caution against plastic pollution set forth in the New International Economic Order was indeed prescient.

V. The New International Economic Order in the context of the rapid pace of technological change

49. Rapid advancements in technology have made the ideas, proposals and suggestions of the New International Economic Order even more relevant at present. In the Programme of Action, technology transfer is identified as one of the ways to close the technological and development divides. Among other things, the Programme includes efforts to be made to "give access on improved terms to modern technology" (sect. IV (b)) and to "expand significantly the assistance from developed to developing countries in research and development programmes" (sect. IV (c)). Those efforts are of renewed relevance at present, because the emergence of new technologies has made it an imperative to avoid further deepening of the technological divide and to take advantage of the leapfrogging opportunities that the new technologies are creating.

A. New technologies

50. The technological frontier continues to expand at a rapid pace, transforming economic activities and social interactions and raising new equity and ethical concerns. The forthcoming United Nations flagship report, entitled *World Economic and Social Survey 2018: Frontier Technologies and Sustainable Development*, highlights related challenges.

51. Considerable advancement has recently been seen in digital technologies — most salient among new technologies — as a result of the generation of massive volumes of data, increasingly advanced algorithms, higher computing power and improved data storage and transmission capacities. This has led to rapid advances in artificial intelligence and the ability of machines to perform routine tasks and autonomously solve increasingly complex problems that typically required advanced cognitive skills. This has profound implications for employment, the future of work and income distribution. In addition, advances in digital technologies often underlie innovations in the physical and biological arenas.

52. Physical technologies, such as 3D printing and new materials, have already started to reform major economic sectors, from manufacturing to health care. Advanced robots represent a combination of physical and digital innovations. Such applications are building on advances in digital technology, with artificial intelligence and the Internet of things creating the bridge between physical and digital technology. Advanced robots can complete a wide variety of tasks, becoming more adaptive and flexible and heralding new types of human-machine collaboration. New materials can help to reduce the use of natural resources by being stronger, lighter, more easily recyclable and more adaptive than more conventional materials. Graphene, an advanced nanomaterial, possesses unique and remarkable properties that could revolutionize energy storage or water desalination. New innovations in biodegradable and thermoset plastics could reduce the reliance on conventional plastic products and finally provide a way out from the conundrum, in which plastic was both unavoidable and unsustainable. Such innovations could create a pathway towards a circular economy, decoupling resource use and economic growth. Similarly, recent advancements in 3D printing promise to transform production processes by drastically altering the way in which goods are produced. This could potentially decrease waste and emissions associated with manufacturing processes.

53. Biological technology offers an array of new opportunities in health care and agriculture. It can potentially offer more efficient treatments for both neglected diseases and diseases that have been fought for decades. New gene-editing techniques allow for the manipulation of biological systems, including the human genome, which can reduce the incidence of genetic diseases. Increasing amounts of data open the possibility for personalized precision medicine, enabling highly targeted and more effective medical treatment. Biotechnology can also revolutionize agriculture by increasing crop yield with genetically modified seeds that are resistant to diseases and adverse weather conditions. It can also improve nutritional quality through the nutritional enhancement of foods.

B. Uneven innovation and diffusion of new technologies

54. The innovation and technological gaps between developed countries and the rest of the world are wide and growing. Information on shares of patent applications and research and development expenditures reveals that the development of new technology is concentrated in a few countries. China, Japan, the United States and the European Union, representing 32 per cent of the world's population in 2015, account collectively for 69 per cent of global scientific publications, 83 per cent of research and development spending and 86 per cent of triadic patent applications.[19]

55. Those gaps are even more acute in the realm of new technologies. For example, the United States alone accounted for an overwhelming 75 per cent of global patents related to artificial intelligence granted during 2016–2017.[20] In three breakthrough innovations, namely 3D printing, nanotechnology and robotics, France, Germany, Japan, the Republic of Korea, the United Kingdom of Great Britain and Northern Ireland and the United States accounted for more than 75 per cent of first patent filings worldwide during the same period.[21] Similarly, in the case of industrial robots, China, Germany, Japan, the Republic of Korea and the United States collectively accounted for about 75 per cent of total sales of robots in 2016.[22]

56. Furthermore, within developed countries, innovation is highly concentrated in a few firms. There is a growing competitiveness gap between smaller firms, which often operate only within the country, and transnational enterprises, which take advantage of economies of scale and loopholes in international regulations. It is increasingly evident that many large technology firms reduce labour and tax costs by moving jobs offshore to low-wage countries, or by threatening to do so, and shift profits through unregulated intra-firm trading of services from intangible assets (e.g. intellectual property rights, financial assets) with no determined geographical location, maximizing corporate rents and undermining fair competition.[23] The rapid pace of technological advances so far has been creating a winner-takes-all dynamic both between and within countries, with large transnational enterprises (and their owners located mostly in developed economies) accumulating rents on an unprecedented scale, driving up inequality within and among countries.

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[19] E/2018/50.

[20] Hidemichi Fujii and Shunsuke Managi, "Trends and priority shifts in artificial intelligence technology invention: a global patent analysis", Research Institute of Economy, Trade and Industry Discussion Paper Series 17-E-066 (May 2017).

[21] World Intellectual Property Organization, *World Intellectual Property Report 2015: Breakthrough Innovation and Economic Growth*, Economics and Statistics Series (Geneva, 2015).

[22] International Federation of Robotics, *World Robotics 2017: Industrial Robots — Executive Summary*.

[23] United Nations, Department of Economic and Social Affairs, "The impact of the technological revolution on labour markets and income distribution", Frontier Issues (31 July 2017).

57. Although the generation of new technologies is increasingly concentrated in a few countries and firms, the diffusion of technology continues to accelerate. While it took 75 years for the telephone to reach 100 million users, the Internet reached the same number of users in less than 10 years. Yet only a handful of key corporate players define the governance of the Internet, and they are headquartered in the two largest economies of the world: China and the United States.[24] However, the greater speed of adoption of technologies across countries masks the slower pace of diffusion within countries. Moreover, even as new technologies quickly become available in most countries, it takes longer for them to become as pervasive and widely used in developing countries as in developed countries. As a result, few people and firms have access to the latest developments in digital, physical and biological technologies, while the majority still lack access to technologies that were invented decades ago.[25]

C. Potential for leapfrogging and risks of falling further behind

58. The uneven spread of technologies poses significant challenges to achieving the Sustainable Development Goals, which will remain elusive unless the technological divide is bridged and all communities are able to access and use the technologies that they need. At the same time, many developing countries have yet to fully absorb the technologies of previous industrial revolutions and lack the conditions necessary to reap the benefits of new technologies. In particular, without the necessary infrastructure, such as electricity, or a minimum level of human capital, it is not possible to adopt new technologies. Unless vigorous efforts are made to overcome such deficiencies, opportunities for leapfrogging may remain unutilized and the technological divide may become deeper and wider.

59. Nevertheless, there are encouraging examples of leapfrogging. For instance, many people in developing countries leapfrogged to mobile phones without ever having landlines. Similarly, many of them leapfrogged to renewable solar power without ever having electricity generated from fossil fuels. Morocco, for example, started experimenting with renewable energy in 1996 and managed to increase rural electrification from 28 per cent in 1996 to 100 per cent in 2016.[26] Renewable energy technologies have widened the scope for technological leapfrogging, providing electricity through green energy sources in many developing countries.

60. Following those early examples, people in developing countries are currently switching to smartphones. For example, more than 50 per cent of the population in Chile, Lebanon, Malaysia and Turkey reported owning a smartphone in 2015 and 2016.[27] People in developing countries are also becoming regular Internet users. In many countries, they are making innovative uses of smartphones and the Internet to provide various platform-based services. Crowd-based platforms have already created new occupations and sources of income in developing countries. In addition to adopting international platforms, many developing countries have developed their own local platforms catering to local conditions, such as Go-Jek for motorbike ride sharing in Indonesia and Pathao for a similar service in Bangladesh. Another example of technological leapfrogging in developing countries is the use of drones to overcome basic infrastructure bottlenecks to deliver goods, such as medical supplies

[24] Klaus Schwab, *Shaping the Fourth Industrial Revolution* (World Economic Forum, Geneva, 11 January 2018).

[25] United Nations, Department of Economic and Social Affairs, "Unlocking the potential of knowledge and technology for all", Frontier Issues (1 April 2018).

[26] World Bank, World Development Indicators database.

[27] Lee Rainie and Andrew Perrin, "10 facts about smartphones as the iPhone turns 10", Pew Research Center, 28 June 2017.

to health clinics in remote locations, which has already been tested in Rwanda and the United Republic of Tanzania.

61. Digital finance technology, such as mobile payment systems, offers important examples in which developing countries have adopted and adapted new technologies to address local development challenges. In developing countries, mobile payment systems have been leveraged to facilitate payments, savings, credit and insurance. This has greatly increased the number of people with access to financial services in developing countries and contributed to poverty reduction. At present, using phones to make payments is more common in many developing countries than in developed countries. More than 80 per cent of people in China, India and Kenya are likely to use mobile payments, while the share is only around 30 per cent in developed countries such as France and Japan.[28]

62. The emergence of new technologies can open up opportunities for countries to catch up in terms of technological progress in many other ways. For example, computer-aided design and manufacturing have allowed some countries to participate in global value chains of increasingly complicated products. In addition, countries that are not saddled by investments and infrastructure needs related to technologies of the past can be well positioned to take advantage of many new technologies.

63. Along with providing such opportunities, new technologies can also be a source of concern for developing countries that are far behind in terms of technology and income. The full utilization of the possibilities opened up by new technologies requires a certain level of infrastructure and human capital. Countries that fail to meet those preconditions may remain at a disadvantage and see the technological and income gaps between them and developed countries widen rather than narrow. Furthermore, the increased use of robots, 3D printing and other related technologies may undercut the labour cost advantage of many developing countries and derail their path to industrialization through labour-intensive manufacturing. By triggering the reshoring of manufacturing, new technologies may constrict or shut that path, making the industrialization of developing countries more challenging.

D. Relevance of the New International Economic Order in the era of new technologies

64. The principles and ideas of the New International Economic Order can be of particular relevance for developing countries in rapidly meeting the preconditions for making use of the opportunities created by new technologies and in accessing and using new technologies to accelerate progress towards sustainable development. Without a conscious international effort following the spirit of the New International Economic Order, it may be difficult for many developing countries to achieve sustainable development. The growing domination of new technologies by a few countries and by a few firms in those countries exacerbates that challenge.

65. To compete in the increasingly complex and concentrated technological landscape, developing countries will need access to, and capacities for, different new technologies. This means that developing countries have a greater need than ever for effective channels for technology transfers and for assistance in research and development. As suggested in the New International Economic Order, this implies greater international assistance and new rules for the generation, diffusion and adoption of new technologies, reflecting shared and differentiated responsibilities among all countries.

[28] United Nations Conference on Trade and Development, "Data privacy: new global survey reveals growing internet anxiety", 16 April 2018.

66. A harmonized level of protection of intellectual property rights is needed to create a level playing field and facilitate effective technology transfer and diffusion, especially the transfer of technologies that are critical for sustainable development. However, the current intellectual property rights regime is tilted towards protecting the intellectual property rights of large corporations in developed countries. For example, existing trade agreements often include measures that restrict the introduction of technology transfer or domestic content requirements. Such restrictions hamper the ability of developing countries to implement industrial policies that are in line with their national innovation aspirations. This contributes to perpetuating the technological gap and undermining the potential of new technologies to bring broad-based development benefits to developing countries. A more development-oriented and flexible intellectual property rights regime that fosters the rapid diffusion of specific technologies will be critical for sustainable development.[29]

67. More effective international cooperation to manage advances in new technologies is also essential. Without such cooperation, stringent regulations in one country will create incentives for regulatory arbitrage, with firms relocating economic activities to jurisdictions with less stringent regulations. For example, disparate regulatory regimes in different countries can direct the testing of technologies, such as autonomous vehicles, to locations with fewer testing restrictions, thereby transferring the risks of testing to certain populations. In addition, a race to the bottom between developing countries offering less stringent regulations and tax requirements to attract investment and technology from abroad can be costly for sustainable development.

68. International cooperation to ensure that advances in new technology meet universal ethical and moral standards is also critical. Technologies such as gene editing, cloning and artificial intelligence pose existential ethical questions related to the future of humanity and the nature of human existence. Such technologies will offer the opportunity to push the current boundaries of human capabilities, performance and cognition, which may end up serving specific groups rather than the public at large and lead to even more profound inequality. Governance of such technologies must be anchored in broadly accepted values and built upon existing principles, standards and goals such as those embodied in the Charter of the United Nations, the Universal Declaration of Human Rights and the 2030 Agenda for Sustainable Development. If the benefits of these technologies are to be realized and their risks mitigated, the international community will need to work more closely together. For this reason, in July 2018 the Secretary-General launched the High-level Panel on Digital Cooperation with a mandate to strengthen cooperation in the digital space among Governments, the private sector, civil society, international organizations, academia and other relevant communities. The Panel and its coordinating secretariat will meet with representatives of these fields and produce a report in 2019 with a suite of recommendations for improved global cooperation.

VI. Role of the United Nations

69. In the Declaration on the Establishment of a New International Economic Order, Member States anticipated and advocated a greater role for the United Nations, observing that "the United Nations as a universal organization should be capable of dealing with problems of international economic cooperation in a comprehensive manner and ensuring equally the interests of all countries" (para. 6). A central role

[29] Dean Baker, Arjun Jayadev and Joseph Stiglitz, *Innovation, Intellectual Property, and Development: A Better Set of Approaches for the 21st Century*, Access IBSA: Innovation and Access to Medicines in India, Brazil and South Africa (July 2017).

was envisaged for the Economic and Social Council in the implementation of the Declaration: all organizations were asked to submit their progress reports on the implementation of the New International Economic Order to the Council, and the Council was requested to draw the attention of the General Assembly to any difficulty experienced in the implementation of the Programme of Action. Those suggestions can provide helpful pointers to the United Nations as it decides on ways to guide the process of achieving the development agenda adopted in 2015 in the current context of a new technological and industrial revolution.

70. The 2030 Agenda, the Addis Ababa Action Agenda and the Paris Agreement were all formulated under the auspices of the United Nations. To facilitate their implementation, important organizational platforms and processes were initiated, such as the high-level political forum on sustainable development and the High-level Conference on Financing for Development and the Means of Implementation of the 2030 Agenda for Sustainable Development. The implementation of the Paris Agreement also relies heavily on the organizational mechanisms created under the United Nations Framework Convention on Climate Change.

71. Given the importance of technology in achieving the development agenda, several technology-related initiatives were embedded in the above-mentioned agendas. For example, both the Addis Ababa Action Agenda and the 2030 Agenda called for a Technology Facilitation Mechanism, with three components, namely a United Nations inter-agency task team, a multi-stakeholder forum and an online platform. The Paris Agreement included a provision for the establishment of a Technology Mechanism. Earlier, the Technology Bank for the Least Developed Countries was set up pursuant to the Programme of Action for the Least Developed Countries for the Decade 2011–2020.

72. The importance of such institutional arrangements, set up under the auspices of the United Nations, has increased in the light of emerging new technologies. The United Nations must now enhance its functions with strong technical and financial support from developed countries, and its role must go beyond just facilitating the transfer of technologies to developing countries. Instead, its role must include guiding new technologies towards the Sustainable Development Goals. In particular, the new arrangements must lead the broad coalition of both State and non-State actors in setting the moral and ethical parameters within which new technologies should develop and be put to use.